SEQUENCE LISTING

<110> Applied Research Systems ARS holding N.V.

<120> NOVEL THERAPEUTIC FUSION PROTEINS

<130> WO895

<160> 24

<170> PatentIn version 3.1

<210> 1
<211> 183
<212> PRT
<213> Homo sapiens

<400> 1

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Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu Phe Met Gly Ala Ser
1               5                  10                  15

Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala Leu Gly Tyr Val Asp
            20                  25                  30

Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser Arg Arg Val Glu Pro
        35                  40                  45

Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser Gln Met Trp Leu Gln
    50                  55                  60

Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met Phe Thr Val Asp Phe
65                  70                  75                  80

Trp Thr Ile Met Glu Asn His Asn His Ser Lys Glu Ser His Thr Leu
                85                  90                  95

Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp Asn Ser Thr Glu Gly
            100                 105                 110

Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His Leu Glu Phe Cys Pro
        115                 120                 125

Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg Ala Trp Pro Thr Lys
    130                 135                 140
```

Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg Gln Asn Arg Ala Tyr
145 150 155 160

Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln Leu Leu Glu Leu Gly
165 170 175

Arg Gly Val Leu Asp Gln Gln
180

<210> 2
<211> 661
<212> PRT
<213> Homo sapiens

<400> 2

Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser Pro Ile Gln Cys Ile
1 5 10 1 5

Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val Thr Leu Asp Gly Gly
20 25 30

Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys Leu Arg Pro Val Ala
35 40 45

Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg Thr His Tyr Tyr Ala
50 55 60

Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln Leu Asn Glu Leu Gln
65 70 75 80

Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg Thr Ala Gly Trp Asn
85 90 95

Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn Trp Thr Gly Pro Pro
100 105 110

Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe Ser Ala Ser Cys Val
115 120 125

Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu Cys Arg Leu Cys Ala
130 135 140

```
Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser Gln Glu Pro Tyr Phe
145                 150                 155                 160

Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp Gly Ala Gly Asp Val
                165                 170                 175

Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp Leu Ser Asp Glu Ala
            180                 185                 190

Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp Asn Thr Arg Lys Pro
        195                 200                 205

Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg Val Pro Ser His Ala
    210                 215                 220

Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp Ala Ile Trp Asn Leu
225                 230                 235                 240

Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp Lys Ser Pro Lys Phe
                245                 250                 255

Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp Leu Leu Phe Lys Asp
            260                 265                 270

Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg Ile Asp Ser Gly Leu
        275                 280                 285

Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln Asn Leu Arg Lys Ser
    290                 295                 300

Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val Val Trp Cys Ala Val
305                 310                 315                 320

Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp Ser Gly Leu Ser Glu
                325                 330                 335

Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr Glu Asp Cys Ile Ala
            340                 345                 350

Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser Leu Asp Gly Gly Tyr
        355                 360                 365
```

```
Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro Val Leu Ala Glu Asn
    370                 375                 380

Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro Asn Cys Val Asp Arg
385                 390                 395                 400

Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val Arg Arg Ser Asp Thr
                405                 410                 415

Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys Ser Cys His Thr Ala
            420                 425                 430

Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met Gly Leu Leu Phe Asn
        435                 440                 445

Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe Ser Gln Ser Cys Ala
    450                 455                 460

Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala Leu Cys Ile Gly Asp
465                 470                 475                 480

Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser Asn Glu Arg Tyr Tyr
                485                 490                 495

Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu Asn Ala Gly Asp Val
            500                 505                 510

Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn Thr Asp Gly Asn Asn
        515                 520                 525

Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala Asp Phe Ala Leu Leu
    530                 535                 540

Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu Ala Arg Ser Cys His
545                 550                 555                 560

Leu Ala Met Ala Pro Asn His Ala Val Val Ser Arg Met Asp Lys Val
                565                 570                 575

Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln Ala Lys Phe Gly Arg
            580                 585                 590
```

Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu Phe Gln Ser Glu Thr
595 600 605

Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys Leu Ala Arg Leu His
610 615 620

Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro Gln Tyr Val Ala Gly
625 630 635 640

Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro Leu Leu Glu Ala Cys
645 650 655

Glu Phe Leu Arg Lys
660

<210> 3
<211> 92
<212> PRT
<213> Homo sapiens

<400> 3

Val Pro Pro Leu Val Lys Val Thr His His Val Thr Ser Ser Val Thr
1 5 10 15

Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met
20 25 30

Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala Lys Glu Phe Glu Pro
35 40 45

Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr Gln Gly Trp Ile Thr
50 55 60

Leu Ala Val Pro Pro Gly Glu Glu Gln Arg Tyr Thr Cys Gln Val Glu
65 70 75 80

His Pro Gly Leu Asp Gln Pro Leu Ile Val Ile Trp
85 90

<210> 4
<211> 753

<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 4

Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser Pro Ile Gln Cys Ile
1 5 10 15

Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val Thr Leu Asp Gly Gly
20 25 30

Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys Leu Arg Pro Val Ala
35 40 45

Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg Thr His Tyr Tyr Ala
50 55 60

Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln Leu Asn Glu Leu Gln
65 70 75 80

Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg Thr Ala Gly Trp Asn
85 90 95

Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn Trp Thr Gly Pro Pro
100 105 110

Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe Ser Ala Ser Cys Val
115 120 125

Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu Cys Arg Leu Cys Ala
130 135 140

Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser Gln Glu Pro Tyr Phe
145 150 155 160

Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp Gly Ala Gly Asp Val
165 170 175

Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp Leu Ser Asp Glu Ala
180 185 190

```
Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp Asn Thr Arg Lys Pro
        195                 200                 205

Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg Val Pro Ser His Ala
    210                 215                 220

Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp Ala Ile Trp Asn Leu
225                 230                 235                 240

Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp Lys Ser Pro Lys Phe
                245                 250                 255

Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp Leu Leu Phe Lys Asp
            260                 265                 270

Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg Ile Asp Ser Gly Leu
        275                 280                 285

Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln Asn Leu Arg Lys Ser
    290                 295                 300

Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val Val Trp Cys Ala Val
305                 310                 315                 320

Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp Ser Gly Leu Ser Glu
                325                 330                 335

Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr Glu Asp Cys Ile Ala
            340                 345                 350

Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser Leu Asp Gly Gly Tyr
        355                 360                 365

Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro Val Leu Ala Glu Asn
    370                 375                 380

Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro Asn Cys Val Asp Arg
385                 390                 395                 400

Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val Arg Arg Ser Asp Thr
                405                 410                 415
```

```
Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys Ser Cys His Thr Ala
            420                 425                 430

Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met Gly Leu Leu Phe Asn
        435                 440                 445

Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe Ser Gln Ser Cys Ala
    450                 455                 460

Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala Leu Cys Ile Gly Asp
465                 470                 475                 480

Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser Asn Glu Arg Tyr Tyr
                485                 490                 495

Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu Asn Ala Gly Asp Val
            500                 505                 510

Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn Thr Asp Gly Asn Asn
        515                 520                 525

Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala Asp Phe Ala Leu Leu
    530                 535                 540

Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu Ala Arg Ser Cys His
545                 550                 555                 560

Leu Ala Met Ala Pro Asn His Ala Val Val Ser Arg Met Asp Lys Val
                565                 570                 575

Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln Ala Lys Phe Gly Arg
            580                 585                 590

Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu Phe Gln Ser Glu Thr
        595                 600                 605

Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys Leu Ala Arg Leu His
    610                 615                 620

Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro Gln Tyr Val Ala Gly
625                 630                 635                 640
```

```
Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro Leu Leu Glu Ala Cys
                645                 650                 655

Glu Phe Leu Arg Lys Val Pro Pro Leu Val Lys Val Thr His His Val
            660                 665                 670

Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro
        675                 680                 685

Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala
    690                 695                 700

Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr
705                 710                 715                 720

Gln Gly Trp Ile Thr Leu Ala Val Pro Pro Gly Glu Glu Gln Arg Tyr
                725                 730                 735

Thr Cys Gln Val Glu His Pro Gly Leu Asp Gln Pro Leu Ile Val Ile
            740                 745                 750

Trp
```

<210> 5
<211> 275
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 5

```
Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu Phe Met Gly Ala Ser
1               5                   10                  15

Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala Leu Gly Tyr Val Asp
            20                  25                  30

Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser Arg Arg Val Glu Pro
        35                  40                  45
```

```
Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser Gln Met Trp Leu Gln
    50                  55                  60

Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met Phe Thr Val Asp Phe
65                  70                  75                  80

Trp Thr Ile Met Glu Asn His Asn His Ser Lys Glu Ser His Thr Leu
                85                  90                  95

Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp Asn Ser Thr Glu Gly
            100                 105                 110

Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His Leu Glu Phe Cys Pro
        115                 120                 125

Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg Ala Trp Pro Thr Lys
    130                 135                 140

Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg Gln Asn Arg Ala Tyr
145                 150                 155                 160

Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln Leu Leu Glu Leu Gly
                165                 170                 175

Arg Gly Val Leu Asp Gln Gln Val Pro Pro Leu Val Lys Val Thr His
            180                 185                 190

His Val Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala Leu Asn Tyr
        195                 200                 205

Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys Gln Pro Met
    210                 215                 220

Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn Gly Asp Gly
225                 230                 235                 240

Thr Tyr Gln Gly Trp Ile Thr Leu Ala Val Pro Pro Gly Glu Glu Gln
                245                 250                 255

Arg Tyr Thr Cys Gln Val Glu His Pro Gly Leu Asp Gln Pro Leu Ile
            260                 265                 270
```

Val Ile Trp
275

<210> 6
<211> 753
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 6

Val Pro Pro Leu Val Lys Val Thr His His Val Thr Ser Ser Val Thr
1 5 10 15

Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met
20 25 30

Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala Lys Glu Phe Glu Pro
35 40 45

Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr Gln Gly Trp Ile Thr
50 55 60

Leu Ala Val Pro Pro Gly Glu Glu Gln Arg Tyr Thr Cys Gln Val Glu
65 70 75 80

His Pro Gly Leu Asp Gln Pro Leu Ile Val Ile Trp Gly Pro Pro Val
85 90 95

Ser Cys Ile Lys Arg Asp Ser Pro Ile Gln Cys Ile Gln Ala Ile Ala
100 105 110

Glu Asn Arg Ala Asp Ala Val Thr Leu Asp Gly Gly Phe Ile Tyr Glu
115 120 125

Ala Gly Leu Ala Pro Tyr Lys Leu Arg Pro Val Ala Ala Glu Val Tyr
130 135 140

Gly Thr Glu Arg Gln Pro Arg Thr His Tyr Tyr Ala Val Ala Val Val
145 150 155 160

Lys Lys Gly Gly Ser Phe Gln Leu Asn Glu Leu Gln Gly Leu Lys Ser

```
                    165                 170                 175

Cys His Thr Gly Leu Arg Arg Thr Ala Gly Trp Asn Val Pro Ile Gly
            180                 185                 190

Thr Leu Arg Pro Phe Leu Asn Trp Thr Gly Pro Pro Glu Pro Ile Glu
        195                 200                 205

Ala Ala Val Ala Arg Phe Phe Ser Ala Ser Cys Val Pro Gly Ala Asp
    210                 215                 220

Lys Gly Gln Phe Pro Asn Leu Cys Arg Leu Cys Ala Gly Thr Gly Glu
225                 230                 235                 240

Asn Lys Cys Ala Phe Ser Ser Gln Glu Pro Tyr Phe Ser Tyr Ser Gly
                245                 250                 255

Ala Phe Lys Cys Leu Arg Asp Gly Ala Gly Asp Val Ala Phe Ile Arg
            260                 265                 270

Glu Ser Thr Val Phe Glu Asp Leu Ser Asp Glu Ala Glu Arg Asp Glu
        275                 280                 285

Tyr Glu Leu Leu Cys Pro Asp Asn Thr Arg Lys Pro Val Asp Lys Phe
    290                 295                 300

Lys Asp Cys His Leu Ala Arg Val Pro Ser His Ala Val Val Ala Arg
305                 310                 315                 320

Ser Val Asn Gly Lys Glu Asp Ala Ile Trp Asn Leu Leu Arg Gln Ala
                325                 330                 335

Gln Glu Lys Phe Gly Lys Asp Lys Ser Pro Lys Phe Gln Leu Phe Gly
            340                 345                 350

Ser Pro Ser Gly Gln Lys Asp Leu Leu Phe Lys Asp Ser Ala Ile Gly
        355                 360                 365

Phe Ser Arg Val Pro Pro Arg Ile Asp Ser Gly Leu Tyr Leu Gly Ser
    370                 375                 380
```

```
Gly Tyr Phe Thr Ala Ile Gln Asn Leu Arg Lys Ser Glu Glu Glu Val
385                 390                 395                 400

Ala Ala Arg Arg Ala Arg Val Val Trp Cys Ala Val Gly Glu Gln Glu
                405                 410                 415

Leu Arg Lys Cys Asn Gln Trp Ser Gly Leu Ser Glu Gly Ser Val Thr
            420                 425                 430

Cys Ser Ser Ala Ser Thr Thr Glu Asp Cys Ile Ala Leu Val Leu Lys
        435                 440                 445

Gly Glu Ala Asp Ala Met Ser Leu Asp Gly Gly Tyr Val Tyr Thr Ala
    450                 455                 460

Gly Lys Cys Gly Leu Val Pro Val Leu Ala Glu Asn Tyr Lys Ser Gln
465                 470                 475                 480

Gln Ser Ser Asp Pro Asp Pro Asn Cys Val Asp Arg Pro Val Glu Gly
                485                 490                 495

Tyr Leu Ala Val Ala Val Val Arg Arg Ser Asp Thr Ser Leu Thr Trp
            500                 505                 510

Asn Ser Val Lys Gly Lys Lys Ser Cys His Thr Ala Val Asp Arg Thr
        515                 520                 525

Ala Gly Trp Asn Ile Pro Met Gly Leu Leu Phe Asn Gln Thr Gly Ser
    530                 535                 540

Cys Lys Phe Asp Glu Tyr Phe Ser Gln Ser Cys Ala Pro Gly Ser Asp
545                 550                 555                 560

Pro Arg Ser Asn Leu Cys Ala Leu Cys Ile Gly Asp Glu Gln Gly Glu
                565                 570                 575

Asn Lys Cys Val Pro Asn Ser Asn Glu Arg Tyr Tyr Gly Tyr Thr Gly
            580                 585                 590

Ala Phe Arg Cys Leu Ala Glu Asn Ala Gly Asp Val Ala Phe Val Lys
        595                 600                 605
```

Asp Val Thr Val Leu Gln Asn Thr Asp Gly Asn Asn Asn Glu Ala Trp
610 615 620

Ala Lys Asp Leu Lys Leu Ala Asp Phe Ala Leu Leu Cys Leu Asp Gly
625 630 635 640

Lys Arg Lys Pro Val Thr Glu Ala Arg Ser Cys His Leu Ala Met Ala
645 650 655

Pro Asn His Ala Val Val Ser Arg Met Asp Lys Val Glu Arg Leu Lys
660 665 670

Gln Val Leu Leu His Gln Gln Ala Lys Phe Gly Arg Asn Gly Ser Asp
675 680 685

Cys Pro Asp Lys Phe Cys Leu Phe Gln Ser Glu Thr Lys Asn Leu Leu
690 695 700

Phe Asn Asp Asn Thr Glu Cys Leu Ala Arg Leu His Gly Lys Thr Thr
705 710 715 720

Tyr Glu Lys Tyr Leu Gly Pro Gln Tyr Val Ala Gly Ile Thr Asn Leu
725 730 735

Lys Lys Cys Ser Thr Ser Pro Leu Leu Glu Ala Cys Glu Phe Leu Arg
740 745 750

Lys

<210> 7
<211> 275
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 7

Val Pro Pro Leu Val Lys Val Thr His His Val Thr Ser Ser Val Thr
1 5 10 15

Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met

```
                20                  25                  30

    Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala Lys Glu Phe Glu Pro
5           35                  40                  45

    Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr Gln Gly Trp Ile Thr
        50                  55                  60
10
    Leu Ala Val Pro Pro Gly Glu Glu Gln Arg Tyr Thr Cys Gln Val Glu
    65                  70                  75                  80

15
    His Pro Gly Leu Asp Gln Pro Leu Ile Val Ile Trp Arg Leu Leu Arg
                    85                  90                  95

20  Ser His Ser Leu His Tyr Leu Phe Met Gly Ala Ser Glu Gln Asp Leu
                100                 105                 110

    Gly Leu Ser Leu Phe Glu Ala Leu Gly Tyr Val Asp Asp Gln Leu Phe
25          115                 120                 125

    Val Phe Tyr Asp His Glu Ser Arg Arg Val Glu Pro Arg Thr Pro Trp
        130                 135                 140
30
    Val Ser Ser Arg Ile Ser Ser Gln Met Trp Leu Gln Leu Ser Gln Ser
    145                 150                 155                 160

35
    Leu Lys Gly Trp Asp His Met Phe Thr Val Asp Phe Trp Thr Ile Met
                    165                 170                 175

40  Glu Asn His Asn His Ser Lys Glu Ser His Thr Leu Gln Val Ile Leu
                180                 185                 190

    Gly Cys Glu Met Gln Glu Asp Asn Ser Thr Glu Gly Tyr Trp Lys Tyr
45          195                 200                 205

    Gly Tyr Asp Gly Gln Asp His Leu Glu Phe Cys Pro Asp Thr Leu Asp
        210                 215                 220
50
    Trp Arg Ala Ala Glu Pro Arg Ala Trp Pro Thr Lys Leu Glu Trp Glu
    225                 230                 235                 240

55
```

Arg His Lys Ile Arg Ala Arg Gln Asn Arg Ala Tyr Leu Glu Arg Asp
245 250 255

Cys Pro Ala Gln Leu Gln Gln Leu Leu Glu Leu Gly Arg Gly Val Leu
260 265 270

Asp Gln Gln
275

<210> 8
<211> 21
<212> PRT
<213> Mus musculus

<400> 8

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp
20

<210> 9
<211> 20
<212> PRT
<213> Homo sapiens

<400> 9

Met Glu Thr Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro
1 5 10 15

Asp Thr Thr Gly
20

<210> 10
<211> 301
<212> PRT
<213> Homo sapiens

<400> 10

Ser Lys Leu Lys Asp Pro Glu Leu Ser Leu Lys Gly Thr Gln His Ile
1 5 10 15

Met Gln Ala Gly Gln Thr Leu His Leu Gln Cys Arg Gly Glu Ala Ala
20 25 30

```
His Lys Trp Ser Leu Pro Glu Met Val Ser Lys Glu Ser Glu Arg Leu
        35                  40                  45

Ser Ile Thr Lys Ser Ala Cys Gly Arg Asn Gly Lys Gln Phe Cys Ser
    50                  55                  60

Thr Leu Thr Leu Asn Thr Ala Gln Ala Asn His Thr Gly Phe Tyr Ser
65                  70                  75                  80

Cys Lys Tyr Leu Ala Val Pro Thr Ser Lys Lys Lys Glu Thr Glu Ser
                85                  90                  95

Ala Ile Tyr Ile Phe Ile Ser Asp Thr Gly Arg Pro Phe Val Glu Met
            100                 105                 110

Tyr Ser Glu Ile Pro Glu Ile Ile His Met Thr Glu Gly Arg Glu Leu
        115                 120                 125

Val Ile Pro Cys Arg Val Thr Ser Pro Asn Ile Thr Val Thr Leu Lys
    130                 135                 140

Lys Phe Pro Leu Asp Thr Leu Ile Pro Asp Gly Lys Arg Ile Ile Trp
145                 150                 155                 160

Asp Ser Arg Lys Gly Phe Ile Ile Ser Asn Ala Thr Tyr Lys Glu Ile
                165                 170                 175

Gly Leu Leu Thr Cys Glu Ala Thr Val Asn Gly His Leu Tyr Lys Thr
            180                 185                 190

Asn Tyr Leu Thr His Arg Gln Thr Asn Thr Ile Ile Asp Val Gln Ile
        195                 200                 205

Ser Thr Pro Arg Pro Val Lys Leu Leu Arg Gly His Thr Leu Val Leu
    210                 215                 220

Asn Cys Thr Ala Thr Thr Pro Leu Asn Thr Arg Val Gln Met Thr Trp
225                 230                 235                 240

Ser Tyr Pro Asp Glu Lys Asn Lys Arg Ala Ser Val Arg Arg Arg Ile
```

245 250 255

Asp Gln Ser Asn Ser His Ala Asn Ile Phe Tyr Ser Val Leu Thr Ile
260 265 270

Asp Lys Met Gln Asn Lys Asp Lys Gly Leu Tyr Thr Cys Arg Val Arg
275 280 285

Ser Gly Pro Ser Phe Lys Ser Val Asn Thr Ser Val His
290 295 300

<210> 11
<211> 1042
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 11

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser
20 25 30

Pro Ile Gln Cys Ile Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val
35 40 45

Thr Leu Asp Gly Gly Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys
50 55 60

Leu Arg Pro Val Ala Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg
65 70 75 80

Thr His Tyr Tyr Ala Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln
85 90 95

Leu Asn Glu Leu Gln Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg
100 105 110

Thr Ala Gly Trp Asn Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn
115 120 125

```
Trp Thr Gly Pro Pro Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe
    130                 135                 140

Ser Ala Ser Cys Val Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu
145                 150                 155                 160

Cys Arg Leu Cys Ala Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser
                165                 170                 175

Gln Glu Pro Tyr Phe Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp
            180                 185                 190

Gly Ala Gly Asp Val Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp
        195                 200                 205

Leu Ser Asp Glu Ala Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp
    210                 215                 220

Asn Thr Arg Lys Pro Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg
225                 230                 235                 240

Val Pro Ser His Ala Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp
                245                 250                 255

Ala Ile Trp Asn Leu Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp
            260                 265                 270

Lys Ser Pro Lys Phe Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp
        275                 280                 285

Leu Leu Phe Lys Asp Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg
    290                 295                 300

Ile Asp Ser Gly Leu Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln
305                 310                 315                 320

Asn Leu Arg Lys Ser Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val
                325                 330                 335

Val Trp Cys Ala Val Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp
            340                 345                 350
```

```
Ser Gly Leu Ser Glu Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr
        355                 360                 365

Glu Asp Cys Ile Ala Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser
    370                 375                 380

Leu Asp Gly Gly Tyr Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro
385                 390                 395                 400

Val Leu Ala Glu Asn Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro
                405                 410                 415

Asn Cys Val Asp Arg Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val
            420                 425                 430

Arg Arg Ser Asp Thr Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys
        435                 440                 445

Ser Cys His Thr Ala Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met
    450                 455                 460

Gly Leu Leu Phe Asn Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe
465                 470                 475                 480

Ser Gln Ser Cys Ala Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala
                485                 490                 495

Leu Cys Ile Gly Asp Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser
            500                 505                 510

Asn Glu Arg Tyr Tyr Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu
        515                 520                 525

Asn Ala Gly Asp Val Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn
    530                 535                 540

Thr Asp Gly Asn Asn Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala
545                 550                 555                 560

Asp Phe Ala Leu Leu Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu
```

565 570 575

Ala Arg Ser Cys His Leu Ala Met Ala Pro Asn His Ala Val Val Ser
580 585 590

Arg Met Asp Lys Val Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln
595 600 605

Ala Lys Phe Gly Arg Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu
610 615 620

Phe Gln Ser Glu Thr Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys
625 630 635 640

Leu Ala Arg Leu His Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro
645 650 655

Gln Tyr Val Ala Gly Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro
660 665 670

Leu Leu Glu Ala Cys Glu Phe Leu Arg Lys Val Pro Pro Leu Val Lys
675 680 685

Val Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala
690 695 700

Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys
705 710 715 720

Gln Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn
725 730 735

Gly Asp Gly Thr Tyr Ser Lys Leu Lys Asp Pro Glu Leu Ser Leu Lys
740 745 750

Gly Thr Gln His Ile Met Gln Ala Gly Gln Thr Leu His Leu Gln Cys
755 760 765

Arg Gly Glu Ala Ala His Lys Trp Ser Leu Pro Glu Met Val Ser Lys
770 775 780

```
Glu Ser Glu Arg Leu Ser Ile Thr Lys Ser Ala Cys Gly Arg Asn Gly
785                 790                 795                 800

Lys Gln Phe Cys Ser Thr Leu Thr Leu Asn Thr Ala Gln Ala Asn His
                805                 810                 815

Thr Gly Phe Tyr Ser Cys Lys Tyr Leu Ala Val Pro Thr Ser Lys Lys
            820                 825                 830

Lys Glu Thr Glu Ser Ala Ile Tyr Ile Phe Ile Ser Asp Thr Gly Arg
        835                 840                 845

Pro Phe Val Glu Met Tyr Ser Glu Ile Pro Glu Ile Ile His Met Thr
    850                 855                 860

Glu Gly Arg Glu Leu Val Ile Pro Cys Arg Val Thr Ser Pro Asn Ile
865                 870                 875                 880

Thr Val Thr Leu Lys Lys Phe Pro Leu Asp Thr Leu Ile Pro Asp Gly
                885                 890                 895

Lys Arg Ile Ile Trp Asp Ser Arg Lys Gly Phe Ile Ile Ser Asn Ala
            900                 905                 910

Thr Tyr Lys Glu Ile Gly Leu Leu Thr Cys Glu Ala Thr Val Asn Gly
        915                 920                 925

His Leu Tyr Lys Thr Asn Tyr Leu Thr His Arg Gln Thr Asn Thr Ile
    930                 935                 940

Ile Asp Val Gln Ile Ser Thr Pro Arg Pro Val Lys Leu Leu Arg Gly
945                 950                 955                 960

His Thr Leu Val Leu Asn Cys Thr Ala Thr Thr Pro Leu Asn Thr Arg
                965                 970                 975

Val Gln Met Thr Trp Ser Tyr Pro Asp Glu Lys Asn Lys Arg Ala Ser
            980                 985                 990

Val Arg Arg Arg Ile Asp Gln Ser  Asn Ser His Ala Asn  Ile Phe Tyr
        995                 1000                1005
```

Ser Val Leu Thr Ile Asp Lys Met Gln Asn Lys Asp Lys Gly Leu
1010 1015 1020

Tyr Thr Cys Arg Val Arg Ser Gly Pro Ser Phe Lys Ser Val Asn
1025 1030 1035

Thr Ser Val His
1040

<210> 12
<211> 597
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 12

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu
20 25 30

Phe Met Gly Ala Ser Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala
35 40 45

Leu Gly Tyr Val Asp Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser
50 55 60

Arg Arg Val Glu Pro Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser
65 70 75 80

Gln Met Trp Leu Gln Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met
85 90 95

Phe Thr Val Asp Phe Trp Thr Ile Met Glu Asn His Asn His Ser Lys
100 105 110

Glu Ser His Thr Leu Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp
115 120 125

Asn Ser Thr Glu Gly Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His

```
      130                 135                 140

Leu Glu Phe Cys Pro Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg
145                 150                 155                 160

Ala Trp Pro Thr Lys Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg
                165                 170                 175

Gln Asn Arg Ala Tyr Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln
            180                 185                 190

Leu Leu Glu Leu Gly Arg Gly Val Leu Asp Gln Gln Val Pro Pro Leu
        195                 200                 205

Val Lys Val Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys
    210                 215                 220

Arg Ala Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys
225                 230                 235                 240

Asp Lys Gln Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu
                245                 250                 255

Pro Asn Gly Asp Gly Thr Tyr Gln Gly Trp Ile Thr Leu Ala Val Pro
            260                 265                 270

Pro Gly Glu Glu Gln Arg Tyr Thr Cys Gln Val Glu His Pro Gly Leu
        275                 280                 285

Asp Gln Pro Leu Ile Val Ile Trp Ser Lys Leu Lys Asp Pro Glu Leu
    290                 295                 300

Ser Leu Lys Gly Thr Gln His Ile Met Gln Ala Gly Gln Thr Leu His
305                 310                 315                 320

Leu Gln Cys Arg Gly Glu Ala Ala His Lys Trp Ser Leu Pro Glu Met
                325                 330                 335

Val Ser Lys Glu Ser Glu Arg Leu Ser Ile Thr Lys Ser Ala Cys Gly
            340                 345                 350
```

```
Arg Asn Gly Lys Gln Phe Cys Ser Thr Leu Thr Leu Asn Thr Ala Gln
        355                 360                 365

Ala Asn His Thr Gly Phe Tyr Ser Cys Lys Tyr Leu Ala Val Pro Thr
    370                 375                 380

Ser Lys Lys Lys Glu Thr Glu Ser Ala Ile Tyr Ile Phe Ile Ser Asp
385                 390                 395                 400

Thr Gly Arg Pro Phe Val Glu Met Tyr Ser Glu Ile Pro Glu Ile Ile
                405                 410                 415

His Met Thr Glu Gly Arg Glu Leu Val Ile Pro Cys Arg Val Thr Ser
            420                 425                 430

Pro Asn Ile Thr Val Thr Leu Lys Lys Phe Pro Leu Asp Thr Leu Ile
        435                 440                 445

Pro Asp Gly Lys Arg Ile Ile Trp Asp Ser Arg Lys Gly Phe Ile Ile
    450                 455                 460

Ser Asn Ala Thr Tyr Lys Glu Ile Gly Leu Leu Thr Cys Glu Ala Thr
465                 470                 475                 480

Val Asn Gly His Leu Tyr Lys Thr Asn Tyr Leu Thr His Arg Gln Thr
                485                 490                 495

Asn Thr Ile Ile Asp Val Gln Ile Ser Thr Pro Arg Pro Val Lys Leu
            500                 505                 510

Leu Arg Gly His Thr Leu Val Leu Asn Cys Thr Ala Thr Thr Pro Leu
        515                 520                 525

Asn Thr Arg Val Gln Met Thr Trp Ser Tyr Pro Asp Glu Lys Asn Lys
    530                 535                 540

Arg Ala Ser Val Arg Arg Arg Ile Asp Gln Ser Asn Ser His Ala Asn
545                 550                 555                 560

Ile Phe Tyr Ser Val Leu Thr Ile Asp Lys Met Gln Asn Lys Asp Lys
                565                 570                 575
```

Gly Leu Tyr Thr Cys Arg Val Arg Ser Gly Pro Ser Phe Lys Ser Val
580 585 590

Asn Thr Ser Val His
595

<210> 13
<211> 1042
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 13

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Ser Lys Leu Lys Asp Pro Glu Leu Ser Leu Lys
20 25 30

Gly Thr Gln His Ile Met Gln Ala Gly Gln Thr Leu His Leu Gln Cys
35 40 45

Arg Gly Glu Ala Ala His Lys Trp Ser Leu Pro Glu Met Val Ser Lys
50 55 60

Glu Ser Glu Arg Leu Ser Ile Thr Lys Ser Ala Cys Gly Arg Asn Gly
65 70 75 80

Lys Gln Phe Cys Ser Thr Leu Thr Leu Asn Thr Ala Gln Ala Asn His
85 90 95

Thr Gly Phe Tyr Ser Cys Lys Tyr Leu Ala Val Pro Thr Ser Lys Lys
100 105 110

Lys Glu Thr Glu Ser Ala Ile Tyr Ile Phe Ile Ser Asp Thr Gly Arg
115 120 125

Pro Phe Val Glu Met Tyr Ser Glu Ile Pro Glu Ile Ile His Met Thr
130 135 140

Glu Gly Arg Glu Leu Val Ile Pro Cys Arg Val Thr Ser Pro Asn Ile

```
145                 150                 155                 160

Thr Val Thr Leu Lys Lys Phe Pro Leu Asp Thr Leu Ile Pro Asp Gly
                165                 170                 175

Lys Arg Ile Ile Trp Asp Ser Arg Lys Gly Phe Ile Ile Ser Asn Ala
            180                 185                 190

Thr Tyr Lys Glu Ile Gly Leu Leu Thr Cys Glu Ala Thr Val Asn Gly
        195                 200                 205

His Leu Tyr Lys Thr Asn Tyr Leu Thr His Arg Gln Thr Asn Thr Ile
    210                 215                 220

Ile Asp Val Gln Ile Ser Thr Pro Arg Pro Val Lys Leu Leu Arg Gly
225                 230                 235                 240

His Thr Leu Val Leu Asn Cys Thr Ala Thr Thr Pro Leu Asn Thr Arg
                245                 250                 255

Val Gln Met Thr Trp Ser Tyr Pro Asp Glu Lys Asn Lys Arg Ala Ser
            260                 265                 270

Val Arg Arg Arg Ile Asp Gln Ser Asn Ser His Ala Asn Ile Phe Tyr
        275                 280                 285

Ser Val Leu Thr Ile Asp Lys Met Gln Asn Lys Asp Lys Gly Leu Tyr
    290                 295                 300

Thr Cys Arg Val Arg Ser Gly Pro Ser Phe Lys Ser Val Asn Thr Ser
305                 310                 315                 320

Val His Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser Pro Ile Gln
                325                 330                 335

Cys Ile Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val Thr Leu Asp
            340                 345                 350

Gly Gly Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys Leu Arg Pro
        355                 360                 365
```

```
Val Ala Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg Thr His Tyr
    370                 375                 380

Tyr Ala Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln Leu Asn Glu
385                 390                 395                 400

Leu Gln Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg Thr Ala Gly
                405                 410                 415

Trp Asn Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn Trp Thr Gly
            420                 425                 430

Pro Pro Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe Ser Ala Ser
        435                 440                 445

Cys Val Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu Cys Arg Leu
    450                 455                 460

Cys Ala Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser Gln Glu Pro
465                 470                 475                 480

Tyr Phe Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp Gly Ala Gly
                485                 490                 495

Asp Val Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp Leu Ser Asp
            500                 505                 510

Glu Ala Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp Asn Thr Arg
        515                 520                 525

Lys Pro Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg Val Pro Ser
    530                 535                 540

His Ala Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp Ala Ile Trp
545                 550                 555                 560

Asn Leu Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp Lys Ser Pro
                565                 570                 575

Lys Phe Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp Leu Leu Phe
            580                 585                 590
```

```
Lys Asp Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg Ile Asp Ser
        595                 600                 605

Gly Leu Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln Asn Leu Arg
    610                 615                 620

Lys Ser Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val Val Trp Cys
625                 630                 635                 640

Ala Val Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp Ser Gly Leu
                645                 650                 655

Ser Glu Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr Glu Asp Cys
            660                 665                 670

Ile Ala Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser Leu Asp Gly
        675                 680                 685

Gly Tyr Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro Val Leu Ala
    690                 695                 700

Glu Asn Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro Asn Cys Val
705                 710                 715                 720

Asp Arg Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val Arg Arg Ser
                725                 730                 735

Asp Thr Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys Ser Cys His
            740                 745                 750

Thr Ala Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met Gly Leu Leu
        755                 760                 765

Phe Asn Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe Ser Gln Ser
    770                 775                 780

Cys Ala Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala Leu Cys Ile
785                 790                 795                 800

Gly Asp Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser Asn Glu Arg
                805                 810                 815
```

```
Tyr Tyr Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu Asn Ala Gly
            820                 825                 830

Asp Val Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn Thr Asp Gly
        835                 840                 845

Asn Asn Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala Asp Phe Ala
    850                 855                 860

Leu Leu Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu Ala Arg Ser
865                 870                 875                 880

Cys His Leu Ala Met Ala Pro Asn His Ala Val Val Ser Arg Met Asp
                885                 890                 895

Lys Val Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln Ala Lys Phe
            900                 905                 910

Gly Arg Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu Phe Gln Ser
        915                 920                 925

Glu Thr Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys Leu Ala Arg
    930                 935                 940

Leu His Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro Gln Tyr Val
945                 950                 955                 960

Ala Gly Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro Leu Leu Glu
                965                 970                 975

Ala Cys Glu Phe Leu Arg Lys Val Pro Pro Leu Val Lys Val Thr His
            980                 985                 990

His Val Thr Ser Ser Val Thr Thr  Leu Arg Cys Arg Ala  Leu Asn Tyr
        995                 1000                1005

Tyr Pro  Gln Asn Ile Thr Met  Lys Trp Leu Lys Asp  Lys Gln Pro
    1010                1015                1020

Met Asp  Ala Lys Glu Phe Glu  Pro Lys Asp Val Leu  Pro Asn Gly
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1025 1030 1035

Asp Gly Thr Tyr
1040

<210> 14
<211> 597
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 14

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Ser Lys Leu Lys Asp Pro Glu Leu Ser Leu Lys
20 25 30

Gly Thr Gln His Ile Met Gln Ala Gly Gln Thr Leu His Leu Gln Cys
35 40 45

Arg Gly Glu Ala Ala His Lys Trp Ser Leu Pro Glu Met Val Ser Lys
50 55 60

Glu Ser Glu Arg Leu Ser Ile Thr Lys Ser Ala Cys Gly Arg Asn Gly
65 70 75 80

Lys Gln Phe Cys Ser Thr Leu Thr Leu Asn Thr Ala Gln Ala Asn His
85 90 95

Thr Gly Phe Tyr Ser Cys Lys Tyr Leu Ala Val Pro Thr Ser Lys Lys
100 105 110

Lys Glu Thr Glu Ser Ala Ile Tyr Ile Phe Ile Ser Asp Thr Gly Arg
115 120 125

Pro Phe Val Glu Met Tyr Ser Glu Ile Pro Glu Ile Ile His Met Thr
130 135 140

Glu Gly Arg Glu Leu Val Ile Pro Cys Arg Val Thr Ser Pro Asn Ile
145 150 155 160

```
Thr Val Thr Leu Lys Lys Phe Pro Leu Asp Thr Leu Ile Pro Asp Gly
                165                 170                 175

Lys Arg Ile Ile Trp Asp Ser Arg Lys Gly Phe Ile Ile Ser Asn Ala
            180                 185                 190

Thr Tyr Lys Glu Ile Gly Leu Leu Thr Cys Glu Ala Thr Val Asn Gly
        195                 200                 205

His Leu Tyr Lys Thr Asn Tyr Leu Thr His Arg Gln Thr Asn Thr Ile
    210                 215                 220

Ile Asp Val Gln Ile Ser Thr Pro Arg Pro Val Lys Leu Leu Arg Gly
225                 230                 235                 240

His Thr Leu Val Leu Asn Cys Thr Ala Thr Thr Pro Leu Asn Thr Arg
                245                 250                 255

Val Gln Met Thr Trp Ser Tyr Pro Asp Glu Lys Asn Lys Arg Ala Ser
            260                 265                 270

Val Arg Arg Arg Ile Asp Gln Ser Asn Ser His Ala Asn Ile Phe Tyr
        275                 280                 285

Ser Val Leu Thr Ile Asp Lys Met Gln Asn Lys Asp Lys Gly Leu Tyr
    290                 295                 300

Thr Cys Arg Val Arg Ser Gly Pro Ser Phe Lys Ser Val Asn Thr Ser
305                 310                 315                 320

Val His Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu Phe Met Gly
                325                 330                 335

Ala Ser Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala Leu Gly Tyr
            340                 345                 350

Val Asp Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser Arg Arg Val
        355                 360                 365

Glu Pro Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser Gln Met Trp
    370                 375                 380
```

```
Leu Gln Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met Phe Thr Val
385                 390                 395                 400

Asp Phe Trp Thr Ile Met Glu Asn His Asn His Ser Lys Glu Ser His
                405                 410                 415

Thr Leu Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp Asn Ser Thr
            420                 425                 430

Glu Gly Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His Leu Glu Phe
        435                 440                 445

Cys Pro Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg Ala Trp Pro
    450                 455                 460

Thr Lys Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg Gln Asn Arg
465                 470                 475                 480

Ala Tyr Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln Leu Leu Glu
                485                 490                 495

Leu Gly Arg Gly Val Leu Asp Gln Gln Val Pro Pro Leu Val Lys Val
            500                 505                 510

Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala Leu
        515                 520                 525

Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys Gln
    530                 535                 540

Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn Gly
545                 550                 555                 560

Asp Gly Thr Tyr Gln Gly Trp Ile Thr Leu Ala Val Pro Pro Gly Glu
                565                 570                 575

Glu Gln Arg Tyr Thr Cys Gln Val Glu His Pro Gly Leu Asp Gln Pro
            580                 585                 590

Leu Ile Val Ile Trp
```

595

<210> 15
<211> 251
<212> PRT
<213> Homo sapiens

<400> 15

Asp Ser Val Cys Pro Gln Gly Lys Tyr Ile His Pro Gln Asn Asn Ser
1 5 10 15

Ile Cys Cys Thr Lys Cys His Lys Gly Thr Tyr Leu Tyr Asn Asp Cys
20 25 30

Pro Gly Pro Gly Gln Asp Thr Asp Cys Arg Glu Cys Glu Ser Gly Ser
35 40 45

Phe Thr Ala Ser Glu Asn His Leu Arg His Cys Leu Ser Cys Ser Lys
50 55 60

Cys Arg Lys Glu Met Gly Gln Val Glu Ile Ser Ser Cys Thr Val Asp
65 70 75 80

Arg Asp Thr Val Cys Gly Cys Arg Lys Asn Gln Tyr Arg His Tyr Trp
85 90 95

Ser Glu Asn Leu Phe Gln Cys Phe Asn Cys Ser Leu Cys Leu Asn Gly
100 105 110

Thr Val His Leu Ser Cys Gln Glu Lys Gln Asn Thr Val Cys Thr Cys
115 120 125

His Ala Gly Phe Phe Leu Arg Glu Asn Glu Cys Val Ser Cys Ser Asn
130 135 140

Cys Lys Lys Ser Leu Glu Cys Thr Lys Leu Cys Leu Pro Gln Ile Glu
145 150 155 160

Asn Val Lys Gly Thr Glu Asp Ser Gly Thr Thr Val Leu Leu Pro Leu
165 170 175

Val Ile Phe Phe Gly Leu Cys Leu Leu Ser Leu Leu Phe Ile Gly Leu

180 185 190

Met Tyr Arg Tyr Gln Arg Trp Lys Ser Lys Leu Tyr Ser Ile Val Cys
195 200 205

Gly Lys Ser Thr Pro Glu Lys Glu Gly Glu Leu Glu Gly Thr Thr Thr
210 215 220

Lys Pro Leu Ala Pro Asn Pro Ser Phe Ser Pro Thr Pro Gly Phe Thr
225 230 235 240

Pro Thr Leu Gly Phe Ser Pro Val Pro Ser Ser
245 250

<210> 16
<211> 992
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 16

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser
20 25 30

Pro Ile Gln Cys Ile Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val
35 40 45

Thr Leu Asp Gly Gly Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys
50 55 60

Leu Arg Pro Val Ala Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg
65 70 75 80

Thr His Tyr Tyr Ala Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln
85 90 95

Leu Asn Glu Leu Gln Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg
100 105 110

```
Thr Ala Gly Trp Asn Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn
        115                 120                 125

Trp Thr Gly Pro Pro Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe
    130                 135                 140

Ser Ala Ser Cys Val Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu
145                 150                 155                 160

Cys Arg Leu Cys Ala Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser
                165                 170                 175

Gln Glu Pro Tyr Phe Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp
            180                 185                 190

Gly Ala Gly Asp Val Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp
        195                 200                 205

Leu Ser Asp Glu Ala Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp
    210                 215                 220

Asn Thr Arg Lys Pro Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg
225                 230                 235                 240

Val Pro Ser His Ala Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp
                245                 250                 255

Ala Ile Trp Asn Leu Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp
            260                 265                 270

Lys Ser Pro Lys Phe Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp
        275                 280                 285

Leu Leu Phe Lys Asp Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg
    290                 295                 300

Ile Asp Ser Gly Leu Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln
305                 310                 315                 320

Asn Leu Arg Lys Ser Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val
                325                 330                 335
```

```
Val Trp Cys Ala Val Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp
            340                 345                 350

Ser Gly Leu Ser Glu Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr
        355                 360                 365

Glu Asp Cys Ile Ala Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser
    370                 375                 380

Leu Asp Gly Gly Tyr Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro
385                 390                 395                 400

Val Leu Ala Glu Asn Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro
                405                 410                 415

Asn Cys Val Asp Arg Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val
            420                 425                 430

Arg Arg Ser Asp Thr Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys
        435                 440                 445

Ser Cys His Thr Ala Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met
    450                 455                 460

Gly Leu Leu Phe Asn Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe
465                 470                 475                 480

Ser Gln Ser Cys Ala Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala
                485                 490                 495

Leu Cys Ile Gly Asp Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser
            500                 505                 510

Asn Glu Arg Tyr Tyr Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu
        515                 520                 525

Asn Ala Gly Asp Val Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn
    530                 535                 540

Thr Asp Gly Asn Asn Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala
```

545 550 555 560

Asp Phe Ala Leu Leu Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu
565 570 575

Ala Arg Ser Cys His Leu Ala Met Ala Pro Asn His Ala Val Val Ser
580 585 590

Arg Met Asp Lys Val Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln
595 600 605

Ala Lys Phe Gly Arg Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu
610 615 620

Phe Gln Ser Glu Thr Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys
625 630 635 640

Leu Ala Arg Leu His Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro
645 650 655

Gln Tyr Val Ala Gly Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro
660 665 670

Leu Leu Glu Ala Cys Glu Phe Leu Arg Lys Val Pro Pro Leu Val Lys
675 680 685

Val Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala
690 695 700

Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys
705 710 715 720

Gln Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn
725 730 735

Gly Asp Gly Thr Tyr Asp Ser Val Cys Pro Gln Gly Lys Tyr Ile His
740 745 750

Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys Gly Thr Tyr
755 760 765

```
Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp Cys Arg Glu
    770                 775                 780

Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu Arg His Cys
785                 790                 795                 800

Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val Glu Ile Ser
                805                 810                 815

Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg Lys Asn Gln
            820                 825                 830

Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe Asn Cys Ser
        835                 840                 845

Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu Lys Gln Asn
    850                 855                 860

Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu Asn Glu Cys
865                 870                 875                 880

Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr Lys Leu Cys
                885                 890                 895

Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser Gly Thr Thr
            900                 905                 910

Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu Leu Ser Leu
        915                 920                 925

Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys Ser Lys Leu
    930                 935                 940

Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu Gly Glu Leu
945                 950                 955                 960

Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser Phe Ser Pro
                965                 970                 975

Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val Pro Ser Ser
            980                 985                 990
```

<210> 17
<211> 547
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 17

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu
20 25 30

Phe Met Gly Ala Ser Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala
35 40 45

Leu Gly Tyr Val Asp Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser
50 55 60

Arg Arg Val Glu Pro Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser
65 70 75 80

Gln Met Trp Leu Gln Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met
85 90 95

Phe Thr Val Asp Phe Trp Thr Ile Met Glu Asn His Asn His Ser Lys
100 105 110

Glu Ser His Thr Leu Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp
115 120 125

Asn Ser Thr Glu Gly Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His
130 135 140

Leu Glu Phe Cys Pro Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg
145 150 155 160

Ala Trp Pro Thr Lys Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg
165 170 175

Gln Asn Arg Ala Tyr Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln

180 185 190

Leu Leu Glu Leu Gly Arg Gly Val Leu Asp Gln Gln Val Pro Pro Leu
195 200 205

Val Lys Val Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys
210 215 220

Arg Ala Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys
225 230 235 240

Asp Lys Gln Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu
245 250 255

Pro Asn Gly Asp Gly Thr Tyr Gln Gly Trp Ile Thr Leu Ala Val Pro
260 265 270

Pro Gly Glu Glu Gln Arg Tyr Thr Cys Gln Val Glu His Pro Gly Leu
275 280 285

Asp Gln Pro Leu Ile Val Ile Trp Asp Ser Val Cys Pro Gln Gly Lys
290 295 300

Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys
305 310 315 320

Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp
325 330 335

Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu
340 345 350

Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val
355 360 365

Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg
370 375 380

Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe
385 390 395 400

Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu
405 410 415

Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu
420 425 430

Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr
435 440 445

Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser
450 455 460

Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu
465 470 475 480

Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys
485 490 495

Ser Lys Leu Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu
500 505 510

Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser
515 520 525

Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val
530 535 540

Pro Ser Ser
545

<210> 18
<211> 992
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 18

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Asp Ser Val Cys Pro Gln Gly Lys Tyr Ile His
20 25 30

```
Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys Gly Thr Tyr
        35                  40                  45

Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp Cys Arg Glu
    50                  55                  60

Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu Arg His Cys
65                  70                  75                  80

Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val Glu Ile Ser
                85                  90                  95

Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg Lys Asn Gln
            100                 105                 110

Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe Asn Cys Ser
        115                 120                 125

Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu Lys Gln Asn
    130                 135                 140

Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu Asn Glu Cys
145                 150                 155                 160

Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr Lys Leu Cys
                165                 170                 175

Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser Gly Thr Thr
            180                 185                 190

Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu Leu Ser Leu
        195                 200                 205

Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys Ser Lys Leu
    210                 215                 220

Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu Gly Glu Leu
225                 230                 235                 240

Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser Phe Ser Pro
```

245 250 255

Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val Pro Ser Ser
260 265 270

Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser Pro Ile Gln Cys Ile
275 280 285

Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val Thr Leu Asp Gly Gly
290 295 300

Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys Leu Arg Pro Val Ala
305 310 315 320

Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg Thr His Tyr Tyr Ala
325 330 335

Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln Leu Asn Glu Leu Gln
340 345 350

Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg Thr Ala Gly Trp Asn
355 360 365

Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn Trp Thr Gly Pro Pro
370 375 380

Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe Ser Ala Ser Cys Val
385 390 395 400

Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu Cys Arg Leu Cys Ala
405 410 415

Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser Gln Glu Pro Tyr Phe
420 425 430

Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp Gly Ala Gly Asp Val
435 440 445

Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp Leu Ser Asp Glu Ala
450 455 460

```
Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp Asn Thr Arg Lys Pro
465                 470                 475                 480

Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg Val Pro Ser His Ala
                485                 490                 495

Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp Ala Ile Trp Asn Leu
            500                 505                 510

Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp Lys Ser Pro Lys Phe
        515                 520                 525

Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp Leu Leu Phe Lys Asp
    530                 535                 540

Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg Ile Asp Ser Gly Leu
545                 550                 555                 560

Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln Asn Leu Arg Lys Ser
                565                 570                 575

Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val Val Trp Cys Ala Val
            580                 585                 590

Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp Ser Gly Leu Ser Glu
        595                 600                 605

Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr Glu Asp Cys Ile Ala
    610                 615                 620

Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser Leu Asp Gly Gly Tyr
625                 630                 635                 640

Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro Val Leu Ala Glu Asn
                645                 650                 655

Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro Asn Cys Val Asp Arg
            660                 665                 670

Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val Arg Arg Ser Asp Thr
        675                 680                 685
```

```
Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys Ser Cys His Thr Ala
    690                 695                 700

Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met Gly Leu Leu Phe Asn
705                 710                 715                 720

Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe Ser Gln Ser Cys Ala
                725                 730                 735

Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala Leu Cys Ile Gly Asp
            740                 745                 750

Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser Asn Glu Arg Tyr Tyr
        755                 760                 765

Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu Asn Ala Gly Asp Val
    770                 775                 780

Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn Thr Asp Gly Asn Asn
785                 790                 795                 800

Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala Asp Phe Ala Leu Leu
                805                 810                 815

Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu Ala Arg Ser Cys His
            820                 825                 830

Leu Ala Met Ala Pro Asn His Ala Val Val Ser Arg Met Asp Lys Val
        835                 840                 845

Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln Ala Lys Phe Gly Arg
    850                 855                 860

Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu Phe Gln Ser Glu Thr
865                 870                 875                 880

Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys Leu Ala Arg Leu His
                885                 890                 895

Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro Gln Tyr Val Ala Gly
            900                 905                 910
```

Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro Leu Leu Glu Ala Cys
915 920 925

Glu Phe Leu Arg Lys Val Pro Pro Leu Val Lys Val Thr His His Val
930 935 940

Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro
945 950 955 960

Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala
965 970 975

Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr
980 985 990

<210> 19
<211> 547
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 19

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Asp Ser Val Cys Pro Gln Gly Lys Tyr Ile His
20 25 30

Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys Gly Thr Tyr
35 40 45

Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp Cys Arg Glu
50 55 60

Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu Arg His Cys
65 70 75 80

Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val Glu Ile Ser
85 90 95

```
Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg Lys Asn Gln
            100                 105                 110

Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe Asn Cys Ser
        115                 120                 125

Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu Lys Gln Asn
    130                 135                 140

Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu Asn Glu Cys
145                 150                 155                 160

Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr Lys Leu Cys
                165                 170                 175

Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser Gly Thr Thr
            180                 185                 190

Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu Leu Ser Leu
        195                 200                 205

Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys Ser Lys Leu
    210                 215                 220

Tyr Ser Ile Val Cys Gly Lys Ser Thr Pro Glu Lys Glu Gly Glu Leu
225                 230                 235                 240

Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser Phe Ser Pro
                245                 250                 255

Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val Pro Ser Ser
            260                 265                 270

Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu Phe Met Gly Ala Ser
        275                 280                 285

Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala Leu Gly Tyr Val Asp
    290                 295                 300

Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser Arg Arg Val Glu Pro
305                 310                 315                 320
```

```
Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser Gln Met Trp Leu Gln
                325                 330                 335

Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met Phe Thr Val Asp Phe
            340                 345                 350

Trp Thr Ile Met Glu Asn His Asn His Ser Lys Glu Ser His Thr Leu
        355                 360                 365

Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp Asn Ser Thr Glu Gly
    370                 375                 380

Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His Leu Glu Phe Cys Pro
385                 390                 395                 400

Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg Ala Trp Pro Thr Lys
                405                 410                 415

Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg Gln Asn Arg Ala Tyr
            420                 425                 430

Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln Leu Leu Glu Leu Gly
        435                 440                 445

Arg Gly Val Leu Asp Gln Gln Val Pro Pro Leu Val Lys Val Thr His
    450                 455                 460

His Val Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala Leu Asn Tyr
465                 470                 475                 480

Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys Gln Pro Met
                485                 490                 495

Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn Gly Asp Gly
            500                 505                 510

Thr Tyr Gln Gly Trp Ile Thr Leu Ala Val Pro Pro Gly Glu Glu Gln
        515                 520                 525

Arg Tyr Thr Cys Gln Val Glu His Pro Gly Leu Asp Gln Pro Leu Ile
    530                 535                 540
```

Val Ile Trp
545

<210> 20
<211> 169
<212> PRT
<213> Homo sapiens

<400> 20

Thr Pro Val Ser Gln Thr Thr Thr Ala Ala Thr Ala Ser Val Arg Ser
1 5 10 15

Thr Lys Asp Pro Cys Pro Ser Gln Pro Pro Val Phe Pro Ala Ala Lys
20 25 30

Gln Cys Pro Ala Leu Glu Val Thr Trp Pro Glu Val Glu Val Pro Leu
35 40 45

Asn Gly Thr Leu Ser Leu Ser Cys Val Ala Cys Ser Arg Phe Pro Asn
50 55 60

Phe Ser Ile Leu Tyr Trp Leu Gly Asn Gly Ser Phe Ile Glu His Leu
65 70 75 80

Pro Gly Arg Leu Trp Glu Gly Ser Thr Ser Arg Glu Arg Gly Ser Thr
85 90 95

Gly Thr Gln Leu Cys Lys Ala Leu Val Leu Glu Gln Leu Thr Pro Ala
100 105 110

Leu His Ser Thr Asn Phe Ser Cys Val Leu Val Asp Pro Glu Gln Val
115 120 125

Val Gln Arg His Val Val Leu Ala Gln Leu Trp Val Arg Ser Pro Arg
130 135 140

Arg Gly Leu Gln Glu Gln Glu Glu Leu Cys Phe His Met Trp Gly Gly
145 150 155 160

Lys Gly Gly Leu Cys Gln Ser Ser Leu
165

<210> 21
<211> 910
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 21

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Gly Pro Pro Val Ser Cys Ile Lys Arg Asp Ser
20 25 30

Pro Ile Gln Cys Ile Gln Ala Ile Ala Glu Asn Arg Ala Asp Ala Val
35 40 45

Thr Leu Asp Gly Gly Phe Ile Tyr Glu Ala Gly Leu Ala Pro Tyr Lys
50 55 60

Leu Arg Pro Val Ala Ala Glu Val Tyr Gly Thr Glu Arg Gln Pro Arg
65 70 75 80

Thr His Tyr Tyr Ala Val Ala Val Val Lys Lys Gly Gly Ser Phe Gln
85 90 95

Leu Asn Glu Leu Gln Gly Leu Lys Ser Cys His Thr Gly Leu Arg Arg
100 105 110

Thr Ala Gly Trp Asn Val Pro Ile Gly Thr Leu Arg Pro Phe Leu Asn
115 120 125

Trp Thr Gly Pro Pro Glu Pro Ile Glu Ala Ala Val Ala Arg Phe Phe
130 135 140

Ser Ala Ser Cys Val Pro Gly Ala Asp Lys Gly Gln Phe Pro Asn Leu
145 150 155 160

Cys Arg Leu Cys Ala Gly Thr Gly Glu Asn Lys Cys Ala Phe Ser Ser
165 170 175

```
Gln Glu Pro Tyr Phe Ser Tyr Ser Gly Ala Phe Lys Cys Leu Arg Asp
            180                 185                 190

Gly Ala Gly Asp Val Ala Phe Ile Arg Glu Ser Thr Val Phe Glu Asp
        195                 200                 205

Leu Ser Asp Glu Ala Glu Arg Asp Glu Tyr Glu Leu Leu Cys Pro Asp
    210                 215                 220

Asn Thr Arg Lys Pro Val Asp Lys Phe Lys Asp Cys His Leu Ala Arg
225                 230                 235                 240

Val Pro Ser His Ala Val Val Ala Arg Ser Val Asn Gly Lys Glu Asp
                245                 250                 255

Ala Ile Trp Asn Leu Leu Arg Gln Ala Gln Glu Lys Phe Gly Lys Asp
            260                 265                 270

Lys Ser Pro Lys Phe Gln Leu Phe Gly Ser Pro Ser Gly Gln Lys Asp
        275                 280                 285

Leu Leu Phe Lys Asp Ser Ala Ile Gly Phe Ser Arg Val Pro Pro Arg
    290                 295                 300

Ile Asp Ser Gly Leu Tyr Leu Gly Ser Gly Tyr Phe Thr Ala Ile Gln
305                 310                 315                 320

Asn Leu Arg Lys Ser Glu Glu Glu Val Ala Ala Arg Arg Ala Arg Val
                325                 330                 335

Val Trp Cys Ala Val Gly Glu Gln Glu Leu Arg Lys Cys Asn Gln Trp
            340                 345                 350

Ser Gly Leu Ser Glu Gly Ser Val Thr Cys Ser Ser Ala Ser Thr Thr
        355                 360                 365

Glu Asp Cys Ile Ala Leu Val Leu Lys Gly Glu Ala Asp Ala Met Ser
    370                 375                 380

Leu Asp Gly Gly Tyr Val Tyr Thr Ala Gly Lys Cys Gly Leu Val Pro
385                 390                 395                 400
```

```
Val Leu Ala Glu Asn Tyr Lys Ser Gln Gln Ser Ser Asp Pro Asp Pro
                405                 410                 415

Asn Cys Val Asp Arg Pro Val Glu Gly Tyr Leu Ala Val Ala Val Val
            420                 425                 430

Arg Arg Ser Asp Thr Ser Leu Thr Trp Asn Ser Val Lys Gly Lys Lys
        435                 440                 445

Ser Cys His Thr Ala Val Asp Arg Thr Ala Gly Trp Asn Ile Pro Met
    450                 455                 460

Gly Leu Leu Phe Asn Gln Thr Gly Ser Cys Lys Phe Asp Glu Tyr Phe
465                 470                 475                 480

Ser Gln Ser Cys Ala Pro Gly Ser Asp Pro Arg Ser Asn Leu Cys Ala
                485                 490                 495

Leu Cys Ile Gly Asp Glu Gln Gly Glu Asn Lys Cys Val Pro Asn Ser
            500                 505                 510

Asn Glu Arg Tyr Tyr Gly Tyr Thr Gly Ala Phe Arg Cys Leu Ala Glu
        515                 520                 525

Asn Ala Gly Asp Val Ala Phe Val Lys Asp Val Thr Val Leu Gln Asn
    530                 535                 540

Thr Asp Gly Asn Asn Asn Glu Ala Trp Ala Lys Asp Leu Lys Leu Ala
545                 550                 555                 560

Asp Phe Ala Leu Leu Cys Leu Asp Gly Lys Arg Lys Pro Val Thr Glu
                565                 570                 575

Ala Arg Ser Cys His Leu Ala Met Ala Pro Asn His Ala Val Val Ser
            580                 585                 590

Arg Met Asp Lys Val Glu Arg Leu Lys Gln Val Leu Leu His Gln Gln
        595                 600                 605

Ala Lys Phe Gly Arg Asn Gly Ser Asp Cys Pro Asp Lys Phe Cys Leu
    610                 615                 620
```

```
Phe Gln Ser Glu Thr Lys Asn Leu Leu Phe Asn Asp Asn Thr Glu Cys
625                 630                 635                 640

Leu Ala Arg Leu His Gly Lys Thr Thr Tyr Glu Lys Tyr Leu Gly Pro
                645                 650                 655

Gln Tyr Val Ala Gly Ile Thr Asn Leu Lys Lys Cys Ser Thr Ser Pro
            660                 665                 670

Leu Leu Glu Ala Cys Glu Phe Leu Arg Lys Val Pro Pro Leu Val Lys
        675                 680                 685

Val Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala
    690                 695                 700

Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys
705                 710                 715                 720

Gln Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn
                725                 730                 735

Gly Asp Gly Thr Tyr Thr Pro Val Ser Gln Thr Thr Thr Ala Ala Thr
            740                 745                 750

Ala Ser Val Arg Ser Thr Lys Asp Pro Cys Pro Ser Gln Pro Pro Val
        755                 760                 765

Phe Pro Ala Ala Lys Gln Cys Pro Ala Leu Glu Val Thr Trp Pro Glu
    770                 775                 780

Val Glu Val Pro Leu Asn Gly Thr Leu Ser Leu Ser Cys Val Ala Cys
785                 790                 795                 800

Ser Arg Phe Pro Asn Phe Ser Ile Leu Tyr Trp Leu Gly Asn Gly Ser
                805                 810                 815

Phe Ile Glu His Leu Pro Gly Arg Leu Trp Glu Gly Ser Thr Ser Arg
            820                 825                 830

Glu Arg Gly Ser Thr Gly Thr Gln Leu Cys Lys Ala Leu Val Leu Glu
```

835 840 845

Gln Leu Thr Pro Ala Leu His Ser Thr Asn Phe Ser Cys Val Leu Val
850 855 860

Asp Pro Glu Gln Val Val Gln Arg His Val Val Leu Ala Gln Leu Trp
865 870 875 880

Val Arg Ser Pro Arg Arg Gly Leu Gln Glu Gln Glu Glu Leu Cys Phe
885 890 895

His Met Trp Gly Gly Lys Gly Gly Leu Cys Gln Ser Ser Leu
900 905 910

<210> 22
<211> 465
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 22

Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Arg Leu Leu Arg Ser His Ser Leu His Tyr Leu
20 25 30

Phe Met Gly Ala Ser Glu Gln Asp Leu Gly Leu Ser Leu Phe Glu Ala
35 40 45

Leu Gly Tyr Val Asp Asp Gln Leu Phe Val Phe Tyr Asp His Glu Ser
50 55 60

Arg Arg Val Glu Pro Arg Thr Pro Trp Val Ser Ser Arg Ile Ser Ser
65 70 75 80

Gln Met Trp Leu Gln Leu Ser Gln Ser Leu Lys Gly Trp Asp His Met
85 90 95

Phe Thr Val Asp Phe Trp Thr Ile Met Glu Asn His Asn His Ser Lys
100 105 110

```
Glu Ser His Thr Leu Gln Val Ile Leu Gly Cys Glu Met Gln Glu Asp
        115                 120                 125

Asn Ser Thr Glu Gly Tyr Trp Lys Tyr Gly Tyr Asp Gly Gln Asp His
    130                 135                 140

Leu Glu Phe Cys Pro Asp Thr Leu Asp Trp Arg Ala Ala Glu Pro Arg
145                 150                 155                 160

Ala Trp Pro Thr Lys Leu Glu Trp Glu Arg His Lys Ile Arg Ala Arg
                165                 170                 175

Gln Asn Arg Ala Tyr Leu Glu Arg Asp Cys Pro Ala Gln Leu Gln Gln
            180                 185                 190

Leu Leu Glu Leu Gly Arg Gly Val Leu Asp Gln Gln Val Pro Pro Leu
        195                 200                 205

Val Lys Val Thr His His Val Thr Ser Ser Val Thr Thr Leu Arg Cys
    210                 215                 220

Arg Ala Leu Asn Tyr Tyr Pro Gln Asn Ile Thr Met Lys Trp Leu Lys
225                 230                 235                 240

Asp Lys Gln Pro Met Asp Ala Lys Glu Phe Glu Pro Lys Asp Val Leu
                245                 250                 255

Pro Asn Gly Asp Gly Thr Tyr Gln Gly Trp Ile Thr Leu Ala Val Pro
            260                 265                 270

Pro Gly Glu Glu Gln Arg Tyr Thr Cys Gln Val Glu His Pro Gly Leu
        275                 280                 285

Asp Gln Pro Leu Ile Val Ile Trp Thr Pro Val Ser Gln Thr Thr Thr
    290                 295                 300

Ala Ala Thr Ala Ser Val Arg Ser Thr Lys Asp Pro Cys Pro Ser Gln
305                 310                 315                 320

Pro Pro Val Phe Pro Ala Ala Lys Gln Cys Pro Ala Leu Glu Val Thr
                325                 330                 335
```

```
Trp Pro Glu Val Glu Val Pro Leu Asn Gly Thr Leu Ser Leu Ser Cys
            340                 345                 350

Val Ala Cys Ser Arg Phe Pro Asn Phe Ser Ile Leu Tyr Trp Leu Gly
        355                 360                 365

Asn Gly Ser Phe Ile Glu His Leu Pro Gly Arg Leu Trp Glu Gly Ser
    370                 375                 380

Thr Ser Arg Glu Arg Gly Ser Thr Gly Thr Gln Leu Cys Lys Ala Leu
385                 390                 395                 400

Val Leu Glu Gln Leu Thr Pro Ala Leu His Ser Thr Asn Phe Ser Cys
                405                 410                 415

Val Leu Val Asp Pro Glu Gln Val Val Gln Arg His Val Val Leu Ala
            42 0                425                 430

Gln Leu Trp Val Arg Ser Pro Arg Arg Gly Leu Gln Glu Gln Glu Glu
        435                 440                 445

Leu Cys Phe His Met Trp Gly Gly Lys Gly Gly Leu Cys Gln Ser Ser
    450                 455                 460

Leu
465
```

<210> 23
<211> 910
<212> PRT
<213> Artificial sequence
<220>
<223>

<400> 23

```
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1               5                   10                  15

Gly Ser Thr Gly Asp Thr Pro Val Ser Gln Thr Thr Thr Ala Ala Thr
            20                  25                  30
```

```
Ala Ser Val Arg Ser Thr Lys Asp Pro Cys Pro Ser Gln Pro Pro Val
      35                  40                  45

Phe Pro Ala Ala Lys Gln Cys Pro Ala Leu Glu Val Thr Trp Pro Glu
    50                  55                  60

Val Glu Val Pro Leu Asn Gly Thr Leu Ser Leu Ser Cys Val Ala Cys
65                  70                  75                  80

Ser Arg Phe Pro Asn Phe Ser Ile Leu Tyr Trp Leu Gly Asn Gly Ser
                85                  90                  95

Phe Ile Glu His Leu Pro Gly Arg Leu Trp Glu Gly Ser Thr Ser Arg
            100                 105                 110

Glu Arg Gly Ser Thr Gly Thr Gln Leu Cys Lys Ala Leu Val Leu Glu
        115                 120                 125

Gln Leu Thr Pro Ala Leu His Ser Thr Asn Phe Ser Cys Val Leu Val
    130                 135                 140

Asp Pro Glu Gln Val Val Gln Arg His Val Val Leu Ala Gln Leu Trp
145                 150                 155                 160

Val Arg Ser Pro Arg Arg Gly Leu Gln Glu Gln Glu Glu Leu Cys Phe
                165                 170                 175

His Met Trp Gly Gly Lys Gly Gly Leu Cys Gln Ser Ser Leu Gly Pro
            180                 185                 190

Pro Val Ser Cys Ile Lys Arg Asp Ser Pro Ile Gln Cys Ile Gln Ala
        195                 200                 205

Ile Ala Glu Asn Arg Ala Asp Ala Val Thr Leu Asp Gly Gly Phe Ile
    210                 215                 220

Tyr Glu Ala Gly Leu Ala Pro Tyr Lys Leu Arg Pro Val Ala Ala Glu
225                 230                 235                 240

Val Tyr Gly Thr Glu Arg Gln Pro Arg Thr His Tyr Tyr Ala Val Ala
                245                 250                 255
```

```
Val Val Lys Lys Gly Gly Ser Phe Gln Leu Asn Glu Leu Gln Gly Leu
            260                 265                 270

Lys Ser Cys His Thr Gly Leu Arg Arg Thr Ala Gly Trp Asn Val Pro
        275                 280                 285

Ile Gly Thr Leu Arg Pro Phe Leu Asn Trp Thr Gly Pro Pro Glu Pro
    290                 295                 300

Ile Glu Ala Ala Val Ala Arg Phe Phe Ser Ala Ser Cys Val Pro Gly
305                 310                 315                 320

Ala Asp Lys Gly Gln Phe Pro Asn Leu Cys Arg Leu Cys Ala Gly Thr
                325                 330                 335

Gly Glu Asn Lys Cys Ala Phe Ser Ser Gln Glu Pro Tyr Phe Ser Tyr
            340                 345                 350

Ser Gly Ala Phe Lys Cys Leu Arg Asp Gly Ala Gly Asp Val Ala Phe
        355                 360                 365

Ile Arg Glu Ser Thr Val Phe Glu Asp Leu Ser Asp Glu Ala Glu Arg
    370                 375                 380

Asp Glu Tyr Glu Leu Leu Cys Pro Asp Asn Thr Arg Lys Pro Val Asp
385                 390                 395                 400

Lys Phe Lys Asp Cys His Leu Ala Arg Val Pro Ser His Ala Val Val
                405                 410                 415

Ala Arg Ser Val Asn Gly Lys Glu Asp Ala Ile Trp Asn Leu Leu Arg
            420                 425                 430

Gln Ala Gln Glu Lys Phe Gly Lys Asp Lys Ser Pro Lys Phe Gln Leu
        435                 440                 445

Phe Gly Ser Pro Ser Gly Gln Lys Asp Leu Leu Phe Lys Asp Ser Ala
    450                 455                 460

Ile Gly Phe Ser Arg Val Pro Pro Arg Ile Asp Ser Gly Leu Tyr Leu
465                 470                 475                 480
```

```
Gly Ser Gly Tyr Phe Thr Ala Ile Gln Asn Leu Arg Lys Ser Glu Glu
485                 490                 495

Glu Val Ala Ala Arg Arg Ala Arg Val Val Trp Cys Ala Val Gly Glu
500                 505                 510

Gln Glu Leu Arg Lys Cys Asn Gln Trp Ser Gly Leu Ser Glu Gly Ser
515                 520                 525

Val Thr Cys Ser Ser Ala Ser Thr Thr Glu Asp Cys Ile Ala Leu Val
530                 535                 540

Leu Lys Gly Glu Ala Asp Ala Met Ser Leu Asp Gly Gly Tyr Val Tyr
545                 550                 555                 560

Thr Ala Gly Lys Cys Gly Leu Val Pro Val Leu Ala Glu Asn Tyr Lys
565                 570                 575

Ser Gln Gln Ser Ser Asp Pro Asp Pro Asn Cys Val Asp Arg Pro Val
580                 585                 590

Glu Gly Tyr Leu Ala Val Ala Val Val Arg Arg Ser Asp Thr Ser Leu
595                 600                 605

Thr Trp Asn Ser Val Lys Gly Lys Lys Ser Cys His Thr Ala Val Asp
610                 615                 620

Arg Thr Ala Gly Trp Asn Ile Pro Met Gly Leu Leu Phe Asn Gln Thr
625                 630                 635                 640

Gly Ser Cys Lys Phe Asp Glu Tyr Phe Ser Gln Ser Cys Ala Pro Gly
645                 650                 655

Ser Asp Pro Arg Ser Asn Leu Cys Ala Leu Cys Ile Gly Asp Glu Gln
660                 665                 670

Gly Glu Asn Lys Cys Val Pro Asn Ser Asn Glu Arg Tyr Tyr Gly Tyr
675                 680                 685

Thr Gly Ala Phe Arg Cys Leu Ala Glu Asn Ala Gly Asp Val Ala Phe
```

690 695 700

Val Lys Asp Val Thr Val Leu Gln Asn Thr Asp Gly Asn Asn Asn Glu
705 710 715 720

Ala Trp Ala Lys Asp Leu Lys Leu Ala Asp Phe Ala Leu Leu Cys Leu
725 730 735

Asp Gly Lys Arg Lys Pro Val Thr Glu Ala Arg Ser Cys His Leu Ala
740 745 750

Met Ala Pro Asn His Ala Val Val Ser Arg Met Asp Lys Val Glu Arg
755 760 765

Leu Lys Gln Val Leu Leu His Gln Gln Ala Lys Phe Gly Arg Asn Gly
770 775 780

Ser Asp Cys Pro Asp Lys Phe Cys Leu Phe Gln Ser Glu Thr Lys Asn
785 790 795 800

Leu Leu Phe Asn Asp Asn Thr Glu Cys Leu Ala Arg Leu His Gly Lys
805 810 815

Thr Thr Tyr Glu Lys Tyr Leu Gly Pro Gln Tyr Val Ala Gly Ile Thr
820 825 830

Asn Leu Lys Lys Cys Ser Thr Ser Pro Leu Leu Glu Ala Cys Glu Phe
835 840 845

Leu Arg Lys Val Pro Pro Leu Val Lys Val Thr His His Val Thr Ser
850 855 860

Ser Val Thr Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro Gln Asn
865 870 875 880

Ile Thr Met Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala Lys Glu
885 890 895

Phe Glu Pro Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr
900 905 910

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Gly Ser Thr Gly Asp Thr Pro Val Ser Gln Thr Thr Thr Ala Ala Thr
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Ala Ser Val Arg Ser Thr Lys Asp Pro Cys Pro Ser Gln Pro Pro Val
35 40 45

Phe Pro Ala Ala Lys Gln Cys Pro Ala Leu Glu Val Thr Trp Pro Glu
50 55 60

Val Glu Val Pro Leu Asn Gly Thr Leu Ser Leu Ser Cys Val Ala Cys
65 70 75 80

Ser Arg Phe Pro Asn Phe Ser Ile Leu Tyr Trp Leu Gly Asn Gly Ser
85 90 95

Phe Ile Glu His Leu Pro Gly Arg Leu Trp Glu Gly Ser Thr Ser Arg
100 105 110

Glu Arg Gly Ser Thr Gly Thr Gln Leu Cys Lys Ala Leu Val Leu Glu
115 120 125

Gln Leu Thr Pro Ala Leu His Ser Thr Asn Phe Ser Cys Val Leu Val
130 135 140

Asp Pro Glu Gln Val Val Gln Arg His Val Val Leu Ala Gln Leu Trp
145 150 155 160

Val Arg Ser Pro Arg Arg Gly Leu Gln Glu Gln Glu Glu Leu Cys Phe
165 170 175

His Met Trp Gly Gly Lys Gly Gly Leu Cys Gln Ser Ser Leu Arg Leu
180 185 190

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Leu Arg Ser His Ser Leu His Tyr Leu Phe Met Gly Ala Ser Glu Gln
        195                 200                 205

Asp Leu Gly Leu Ser Leu Phe Glu Ala Leu Gly Tyr Val Asp Asp Gln
    210                 215                 220

Leu Phe Val Phe Tyr Asp His Glu Ser Arg Arg Val Glu Pro Arg Thr
225                 230                 235                 240

Pro Trp Val Ser Ser Arg Ile Ser Ser Gln Met Trp Leu Gln Leu Ser
                245                 250                 255

Gln Ser Leu Lys Gly Trp Asp His Met Phe Thr Val Asp Phe Trp Thr
            260                 265                 270

Ile Met Glu Asn His Asn His Ser Lys Glu Ser His Thr Leu Gln Val
        275                 280                 285

Ile Leu Gly Cys Glu Met Gln Glu Asp Asn Ser Thr Glu Gly Tyr Trp
    290                 295                 300

Lys Tyr Gly Tyr Asp Gly Gln Asp His Leu Glu Phe Cys Pro Asp Thr
305                 310                 315                 320

Leu Asp Trp Arg Ala Ala Glu Pro Arg Ala Trp Pro Thr Lys Leu Glu
                325                 330                 335

Trp Glu Arg His Lys Ile Arg Ala Arg Gln Asn Arg Ala Tyr Leu Glu
            340                 345                 350

Arg Asp Cys Pro Ala Gln Leu Gln Gln Leu Leu Glu Leu Gly Arg Gly
        355                 360                 365

Val Leu Asp Gln Gln Val Pro Pro Leu Val Lys Val Thr His His Val
    370                 375                 380

Thr Ser Ser Val Thr Thr Leu Arg Cys Arg Ala Leu Asn Tyr Tyr Pro
385                 390                 395                 400

Gln Asn Ile Thr Met Lys Trp Leu Lys Asp Lys Gln Pro Met Asp Ala
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405 410 415

Lys Glu Phe Glu Pro Lys Asp Val Leu Pro Asn Gly Asp Gly Thr Tyr
420 425 430

Gln Gly Trp Ile Thr Leu Ala Val Pro Pro Gly Glu Glu Gln Arg Tyr
435 440 445

Thr Cys Gln Val Glu His Pro Gly Leu Asp Gln Pro Leu Ile Val Ile
450 455 460

Trp
465